PAN-PACIFIC ENTOMOLOGIST
April 1982, Vol. 58, No. 2, pp. 135–138

PALTOTHEMIS CYANOSOMA, A NEW SPECIES OF DRAGONFLY FROM MEXICO (ODONATA: LIBELLULIDAE)

ROSSER W. GARRISON
1030 Fondale Street,
Azusa, California 91702

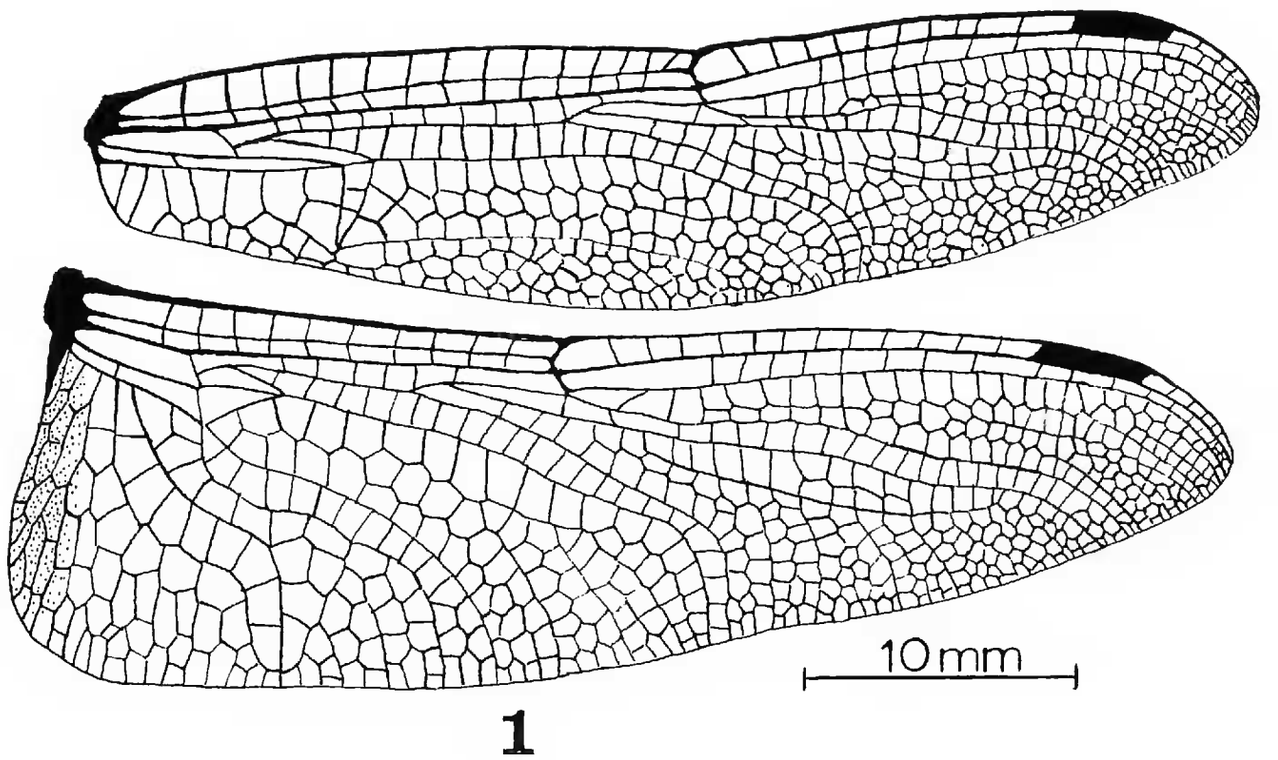
The libellulid genus *Paltothemis* Karsch has long contained one species, *P. lineatipes* Karsch, found commonly in the southwestern United States south to Venezuela (Rácenis, 1953) and Brazil (Calvert, 1899). While examining the dragonfly collection at the University of California, Davis, I found three male specimens of a large, pruinose blue dragonfly incorrectly labeled "*Scapanea frontalis*." Subsequent examination of this material shows them to represent an undescribed species which keys to the genus *Paltothemis* in Borror (1945).

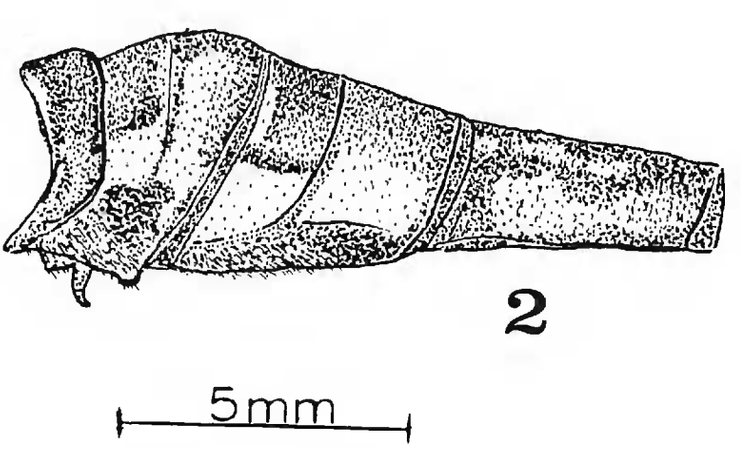
Paltothemis cyanosoma, new species
(Figs. 1–3, 5)

Head.—Labium dark brown becoming pale yellow brown toward sides and margin; labrum black; mandibles red brown with tips black, yellow brown at base; ante- and postclypeus dark brown, becoming gray brown on sides of postclypeus and about fronto-clypeal sulcus. Frons rugose, dark metallic purple becoming red brown at sides; vesicle of vertex divided longitudinally with prominent pointed cone forming on each side, vertex rugose, dark metallic purple becoming red brown above. Eye seam as long as occiput, latter red brown; antennae black; rear of head black, red brown immediately posterior to eyes. Rear margin of head sprinkled with long white hairs.

Thorax.—Entirely dark brown covered by dark blue pruinosity; prothorax pale brown at margin of lobes, otherwise pruinose blue; posterior lobe small, rounded, bent posteriorly, without hairs. Pterothorax with no discernible pattern, carinae black; front and sides covered with dark hairs. Femora red brown, black at tips; armature black. Tibiae and tarsi black. Wings as shown in Fig. 1, hyaline, distal half slightly infumated; anal margin in hind wing with faint patch of pruinose white extending distally 2–3 cell rows; venation black.

Abdomen.—Slightly swollen at base, narrowing at middle before expanding slightly at tip; segments 1–3 dark pruinose blue, becoming black in remaining segments. In life, entire abdomen probably pruinose blue. Abdominal pattern largely obscured by pruinosity and postmortem changes in

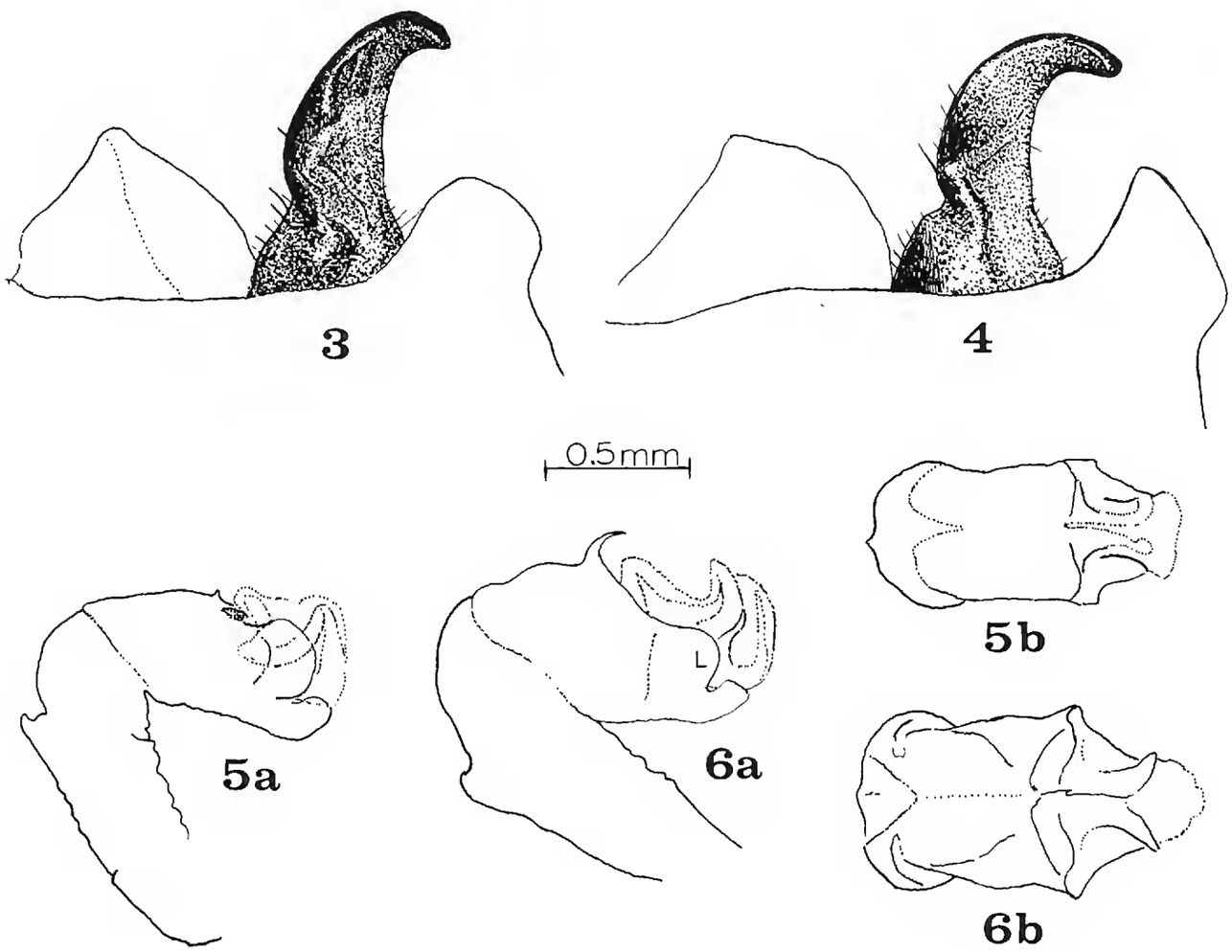




Figs. 1, 2. *Paltothemis cyanosoma,* n. sp., paratype, ♂. Fig. 1. Wings. Fig. 2. Abdominal segments 1–4.

holotype and one paratype. Other paratype probably the youngest of 3 with abdominal pattern as shown in Fig. 2. Juvenile abdominal coloration probably gray and black. Carinae and abdominal appendages black. Secondary genitalia (Fig. 3) similar to *P. lineatipes* (Fig. 4), but with genital lobe rounded and posterior margin of anterior lamina in lateral view almost straight or slightly convex. Hamules similar to those of *P. lineatipes*. Penis (Fig. 5) lacking prominent horn on ventral margin of glans present in *P. lineatipes* (Fig. 6). Lateral lobe more developed than in *P. lineatipes*.

Hind wing length (measurements in parentheses are for holotype): 41–44 mm (44 mm); pterostigma: forewing: 3.5–3.8 mm (3.8 mm), hind wing: 3.5–



Figs. 3–6. Figs. 3, 5. *Paltothemis cyanosoma*, paratype, n. sp. ♂. Figs. 4, 6. *P. lineatipes* ♂. Figs. 3, 4. Accessory genitalia. Figs. 5, 6. Penis: a, lateral view; b, dorsal view. L = lateral lobe.

3.9 mm (3.8 mm); antenodal crossveins: forewings: 15–17 (16 left wing, 17 right wing), hind wing: 10–11 (10 left wing, 10 right wing); postnodal crossveins: forewing: 10–13 (13 left wing, 12 right wing), hind wing: 12–14 (14 left wing, 13 right wing).

Holotype.—Male: Mexico, state of Jalisco, 6 mi N of Guadalajara, 13 August 1970 (Baldomero Villegas). Two paratype males: same data as holotype. Holotype and 1 paratype in collection of University of California, Davis, 1 paratype in author's collection.

In response to my inquiry about the locality of the captures, B. Villegas (in litt., 24 Oct. 1978) responded: "As I remember, on August 13, 1970, I collected about 6 miles north of Guadalajara near the town of Experiencia. The stream that I collected at is within a mile or so from this town. Furthermore, this stream empties into a large canyon located north of Guadalajara. This canyon is called 'Barranca de Oblatos.'" This species probably has habits similar to *P. lineatipes*. I have taken *P. lineatipes* on small streams where adults generally perch on large, exposed rocks in the stream. Dunkle (1978) gives further details of adult behavior.

Male *P. cyanosoma* are easily distinguished from *P. lineatipes* by overall coloration. Male *P. lineatipes* are red and black, possess degrees of orange at the base of the wings, especially around the cubito-anal and triangle regions, and the basal half of the wing venation is red. No red is present on the wings or body of *P. cyanosoma*. Three structural characters further segregate the two: The genital lobe is rounded in *P. cyanosoma* (Fig. 3), but truncate in *P. lineatipes* (Fig. 4); the hood of the penis lacks the prominent horn present in *P. lineatipes,* and the hind wings are relatively narrower than in *P. lineatipes*. Dunkle (1978) gives ratio of maximum hind wing width to length as 1:2.7 in *P. lineatipes*. Measurements from other specimens in my collection show a range of 1:2.6 to 1:2.8. The same ratio for *P. cyanosoma* ranges from 1:2.9–1:3. The number of cells bordering the midrib of the anal loop from the ankle to toe (terminology after Needham and Westfall, 1955) ranges from 3–4 in *P. cyanosoma,* 4–6 in *P. lineatipes*. The ratio of sole to gaff length is 0.76 to 0.82 ($\bar{x}$ = 0.79, N = 3) in *P. cyanosoma,* and is 0.71–1.00 ($\bar{x}$ = 0.86, N = 29) in *P. lineatipes,* but the means are not significantly different ($F_{.05[1,30]} = 3.28$).

Acknowledgments

Special thanks are due to Mr. Robert O. Schuster, University of California, Davis, for allowing me to examine the specimens; Drs. Dennis R. Paulson, University of Washington, Seattle, and Minter J. Westfall, Jr., University of Florida, Gainesville, for criticizing the manuscript; Dr. Baldomero Villegas for providing information concerning the type locality; and to my wife, Jo, who typed the manuscript and provided helpful editorial comments.

Literature Cited

Borror, D. J. 1945. A key to the New World genera of Libellulidae (Odonata). Ann. Entomol. Soc. Amer., 38:168–194.

Calvert, P. P. 1899. Odonata from Tepic, Mexico, with supplementary notes on those of Baja California. Proc. Calif. Acad. Sci., Zool., (3)1:371–418.

Dunkle, S. W. 1978. Notes on adult behavior and emergence of *Paltothemis lineatipes* Karsch, 1890 (Anisoptera: Libellulidae). Odonatologica, 7(3):277–279.

Needham, J. G., and M. J. Westfall, Jr. 1955. A Manual of the Dragonflies of North America (Anisoptera). University of California Press, Berkeley and Los Angeles, xii + 615 pp.

Rácenis, J. 1953. Contribucion al estudio de los Odonata de Venezuela. Anales Univ. Central Venezuela, 35:31–96.